

REMARKS

In the present Amendment, the specification has been amended to correct a U.S. patent number.

Claim 1 has been amended to incorporate the recitations of claims 6 and 17.

Accordingly, claims 6 and 17 have been cancelled. Claims 7 and 8 have been amended to depend from claim 1, rather than from cancelled claim 6. Moreover, claims 2-5, 10-13, 15 and 18-34 have been withdrawn as the result of an earlier restriction requirement. No new matter has been added, and entry of the Amendment is respectfully requested.

Upon entry of the Amendment, claims 1, 7-9, 14 and 16 will be pending and under consideration, while claims 2-5, 10-13, 15 and 18-34 are pending and withdrawn from consideration.

Response to Rejections Under 35 U.S.C. §112

In Paragraph No. 8 of the Action, claims 1, 6-9, 14, 16, and 17 are rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite.

The Examiner states that claim 1 is unclear as to how the template molecule is uniformly distributed as there is only one template molecule. The Examiner also states that it is unclear what the detection group of the matrix is. The Examiner further states that claims 1 and 6 omit essential steps that would show how semiconductor nanoparticles would be polymerized, particularly since Applicants are said not to have disclosed any monomer or crosslinking agent that would allow for polymerization.

Applicants have amended claim 1 to address the Examiner's concerns. In view of the above, Applicants respectfully submit that the requirements of § 112, second paragraph have been satisfied. Withdrawal of the section 112 rejection is respectfully requested.

Response to Rejections Under 35 U.S.C. §102

In Paragraph Nos. 14-17 of the Action, claims 1 and 17 are rejected under 35 U.S.C. §102 (a) as allegedly being anticipated by Spiegel and under 35 U.S.C. §102 (b) as allegedly being anticipated by Perez.

Applicants submit that these rejections should be withdrawn because neither Spiegel nor Perez discloses or renders obvious the method for manufacturing a biochemical labeling material of the present invention.

As noted above, Applicants have amended claim 1 to recite that the nanoparticles are semiconductors. Support for this amendment may be found, for example, on page 6, lines 21-27 of the specification. No new matter has been added.

Spiegel teaches a method for preparing disposable molecularly imprinted nanoparticles, comprising the following steps (shown at page 30, col. 1 of Spiegel). First, template molecules are mixed and bonded with monomers having functionality complementary to that of the template molecules (such as **methacrylic acid** as disclosed in the Experimental section of Spiegel's paper) to create complexes which are monomers bonded with template molecules. Next, the complexes (monomers bonded with template molecules) are mixed with a radical initiator and a polymerization is initiated. Finally, the templates are removed to obtain

nanoparticles with a cavity that is complementary to the template molecule in shape, size, and chemical functionality.

Particularly, Spiegel teaches and suggests that the template molecules are bonded with a **monomer** (such as **methacrylic acid**) rather than **bonding with a semiconductor** as called for in present claim 1 as amended.

Turning to Perez, Perez also teaches a method for preparing molecularly imprinted nanoparticles, comprising the following steps (shown at page 1854, cols. 1-2 of Perez). First, monomers (such as MMA or styrene) with compatible crosslinkers (DVB or EGDMA) undergo an emulsion polymerization to form seed particles between 30-40 nm. Next, the seed particles are swollen with compatible crosslinkers (DVB or EGDMA) in the presence of an initiator (ammonium peroxodisulfate) for a second stage polymerization. In the second stage polymerization, **the templates are added to bond with the seed particles simultaneously**. Particularly, Perez teaches and suggests that the template molecules are bonded with a **polymer** (such as a **polymer of MMA or styrene**) rather than **bonding with a semiconductor** as recited in present claim 1.

Since the cited references do not teach or suggest the method of present claim 1, it is Applicants' belief that claim 1 and the claims depending therefrom are allowable over Spiegel and Perez.

Reconsideration and withdrawal of the §102 rejections based on Spiegel and Perez are respectfully requested.

Response to Rejections Under 35 U.S.C. §103(a)

In Paragraph No. 19 of the Action, claims 1, 6, 9, 14 and 16 are rejected under 35 U.S.C. §103 (a) as allegedly being obvious over Vossmeier in view of Perez.

In Paragraph No. 23 of the Action, claims 7-8 are rejected under 35 U.S.C. § 103 as allegedly being obvious over Vossmeier in view of Perez, and further in view of Peng.

Applicants respectfully traverse the rejections for the reasons discussed below.

Vossmeier teaches a nanoparticle structure for detecting one or more analytes and a sensor employing the nanoparticle structure. As stated by the Examiner, Vossmeier fails to teach that the cavities are formed by molecularly imprinting with a template molecule that is subsequently removed. Namely, Vossmeier does not teach or suggest providing **nanoparticles (semiconductors) to bond with template molecules** as recited in present claim 1.

Perez has been discussed above.

To establish a prima facie case of obviousness, the prior art references must teach or suggest all the claim limitations. Further, to establish a prima facie case of obviousness, there must be some suggestion or motivation, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine the references' teachings.

Here, the cited references, taken alone or in combination, fail to teach at least the step of "bonding the nanoparticles to template molecules by molecular imprinting, wherein the nanoparticles are semiconductors", as recited in claim 1 of this application. Applicants submit that it has not been shown where in the art there is a clear suggestion to combine the disclosures

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and teachings of Vossmeier and Perez. It is further submitted that Peng does not make up for the deficiencies of Vossmeier and Perez.

In view of the above, the Examiner is respectfully requested to reconsider and withdraw the § 103(a) rejection of claims 1, 6, 9, 14 and 16 based on Vossmeier in view of Perez, and the § 103(a) rejection of claims 7-8 based on Vossmeier in view of Perez, further in view of Peng.

Allowance is respectfully requested. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Brett S. Sylvester", written over a horizontal line.

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